



CYLC ROTARY ELECTROMECHANICAL ACTUATORS

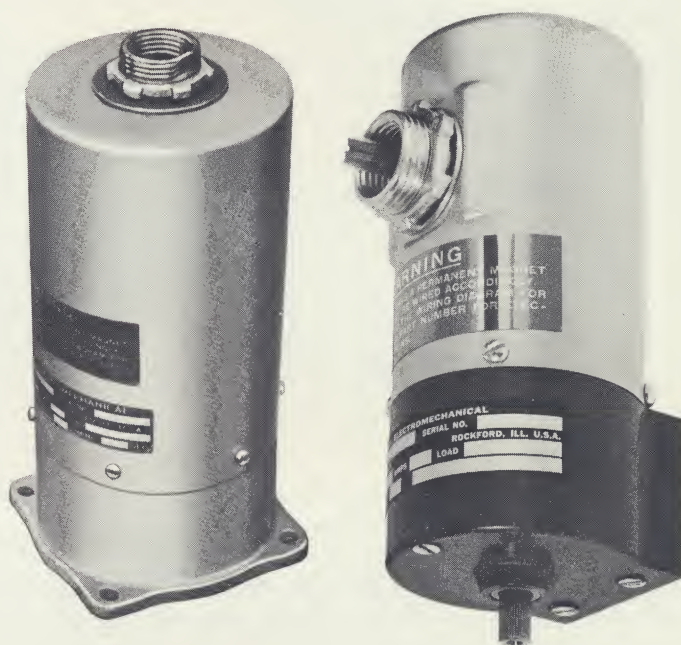
FEATURES

- FAST RESPONSE
- HIGH RELIABILITY
- A-C OR D-C OPERATION
- LOW POWER REQUIREMENTS
- VALUE ENGINEERED FOR LOWER COST
- STOCK ACTUATORS — FAST DELIVERY

GENERAL DESCRIPTION

The CYLC series of rotary electromechanical actuators has been produced specially for industrial purposes. Proven in many varied applications, these actuators are extremely dependable and offer 10,000 cycles of operation without maintenance. Value analysis applied to the design has resulted in the production of a high-quality actuator at an installed price low enough to make it very attractive for many users in industry.

The actuators are compact units, built in MIL-E-5272C explosion-proof aluminum enclosures. Standard CYLC actuators operate in the ambient temperature range -65° to 165° F. Units for higher temperatures can be supplied on special order. All standard CYLC actuators have a stroke of $90^{\circ} \pm 2^{\circ}$, reversible. They are available with travel limit switches arranged to provide two-position or three-position operation with fast, positive control. Three-position units have the third position set at the factory at 45° travel. A choice of four configurations for standard actuators is offered, and variations of these are possible for special order units.



MOTORS

All standard CYLC actuators are driven by a permanent-magnet d-c precision motor giving true electrical balance, high efficiency, superior commutation and a relatively low level of radio interference generation. Such motors are ideal for this purpose, since their efficiency is high and they are extremely reliable. Additionally, they permit the use of dynamic braking, which obviates the need for any form of mechanical brake to give fast stopping. For operation from an a-c supply, a rectifying circuit is included in the actuator. A d-c motor is used even in a-c applications because it has greater efficiency for its size and weight than a corresponding a-c motor.

STANDARD ACTUATORS

A standard CYLC actuator is one designated by a part number in this bulletin. Special units can be designed at increased cost with other motors, potentiometers, brakes, etc. to meet your requirements. For further information consult the factory at Rockford, Illinois, or the nearest field engineering office.

CHARACTERISTICS — STANDARD CYLC ACTUATORS

TWO- POSITION PART NUMBER	SAMPLE LOT PRICE	THREE- POSITION PART NUMBER	SAMPLE LOT PRICE	ENCL. #	INPUT SUPPLY	MAXIMUM CHARACTERISTICS INTERMITTENT DUTY					WEIGHT (Approx.)
						Amperes		Input Watts	Rated Load	Speed at Rated Load	
						Inrush	Run				
CYLC 9023-10	\$120.00	CYLC 9024-10	\$130.00	1	a-c 115V 60~	2.6	1.5	150	500 lb-in.	3.1 sec./90°	3.3 lbs.
CYLC 9023-20	108.00	CYLC 9024-20	118.00	1	d-c 115V	2.8	1.6	150	500 lb-in.	3.1 sec./90°	3.3 lbs.
CYLC 9023-30	108.00	CYLC 9024-30	118.00	1	d-c 26V	16	6	150	500 lb-in.	3.1 sec./90°	3.3 lbs.
CYLC 9025-10	114.00	CYLC 9026-10	124.00	2	a-c 115V 60~	2.6	1.5	150	500 lb-in.	3.1 sec./90°	3.3 lbs.
CYLC 9025-20	102.00	CYLC 9026-20	112.00	2	d-c 115V	2.8	1.6	150	500 lb-in.	3.1 sec./90°	3.3 lbs.
CYLC 9025-30	102.00	CYLC 9026-30	112.00	2	d-c 26V	16	6	150	500 lb-in.	3.1 sec./90°	3.3 lbs.
CYLC 9027-10	109.00	CYLC 9028-10	119.00	3	a-c 115V 60~	1.0	0.2	25	100 lb-in.	2.5 sec./90°	2.0 lbs.
CYLC 9027-20	98.00	CYLC 9028-20	107.00	3	d-c 115V	1.0	0.2	25	100 lb-in.	2.5 sec./90°	2.0 lbs.
CYLC 9027-30	98.00	CYLC 9028-30	107.00	3	d-c 26V	5.0	1.0	25	100 lb-in.	2.5 sec./90°	2.0 lbs.
CYLC 9029-10	115.00	CYLC 9030-10	125.00	4	a-c 115V 60~	1.0	0.2	25	100 lb-in.	2.5 sec./90°	2.0 lbs.
CYLC 9029-20	103.00	CYLC 9030-20	113.00	4	d-c 115V	1.0	0.2	25	100 lb-in.	2.5 sec./90°	2.0 lbs.
CYLC 9029-30	103.00	CYLC 9030-30	113.00	4	d-c 26V	5.0	1.0	25	100 lb-in.	2.5 sec./90°	2.0 lbs.

PRICES AND DISCOUNTS

Prices shown above apply to sample lots only and are those at the time of publication of this bulletin. They are subject to change without notice. For current prices consult your area Barber-Colman representative. Quantity discounts are as follows:

Number of Pieces	Discount
1 — 5	List
6 — 19	10%
20 — 249	20%
250 and up	25%

HOW TO ORDER

Standard CYLC actuators may be ordered by quoting the appropriate part number, as shown above. Different part numbers are used to identify two-position and three-position actuators. Part numbers for special order actuators will be assigned by the factory. Please give full information on your application requirements when requesting special order items.

APPLICATIONS

Barber-Colman CYLC actuators provide reliable remote control of movement, and are ideal for many purposes in modern industry. Examples are: distant control of oil, water or gas valves, the operation of furnace and other doors in places where a human operator cannot function, and various tasks in automated plants where automatic control replaces direct manpower.

TWO-POSITION AND THREE-POSITION ACTUATORS

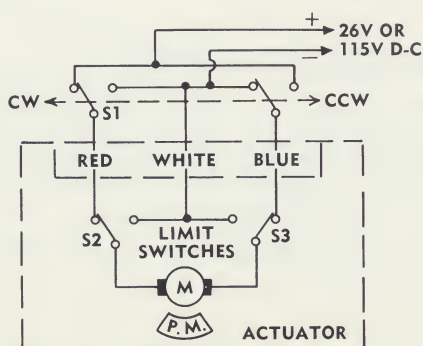
Standard two-position CYLC actuators have two travel limit switches, one or other of which is automatically operated at each end of the stroke (0° and 90° travel). Operation of either switch cuts off motor power and halts movement. Two methods of controlling these actuators are shown in diagrams 1, 2, 4 and 5 (page 3).

Standard three-position CYLC actuators have two additional limit switches, set to halt movement in either direction at a position of 45° travel when the control switch is set to its center position (diagrams 3 and 6, page 3). Three stop positions at 0°, 45° and 90° travel are thereby provided.

WIRING DIAGRAMS

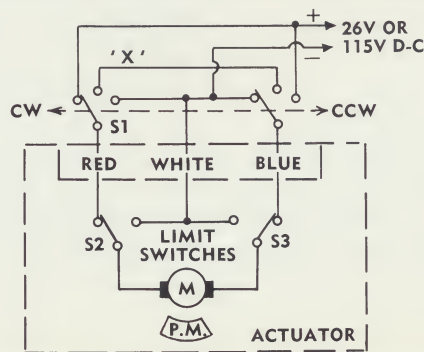
D-C CIRCUIT FOR 2-POSITION ACTUATOR, WITH DP3T MANUAL CONTROL SWITCH

S1 is an external DPDT switch, to be provided by user. S2 is the CW travel limit switch, included in actuator. S3 is the CCW travel limit switch, included in actuator. This circuit provides dynamic braking at both ends of the stroke, and is suitable only for applications requiring no more than this.



D-C CIRCUIT FOR 2-POSITION ACTUATOR, WITH DP3T MANUAL CONTROL SWITCH GIVING DYNAMIC BRAKING IN MID-STROKE

S1 is an external DP3T switch, to be provided by user. S2 is the CW travel limit switch, included in actuator. S3 is the CCW travel limit switch, included in actuator. Dynamic braking is automatically provided, via the external link 'X', when S1 is set to its center position.



D-C CIRCUIT FOR 3-POSITION ACTUATOR, WITH DP3T MANUAL CONTROL SWITCH GIVING PRESET INTERMEDIATE STOPPING, AND DYNAMIC BRAKING

S1 is an external DP3T switch, to be provided by user.

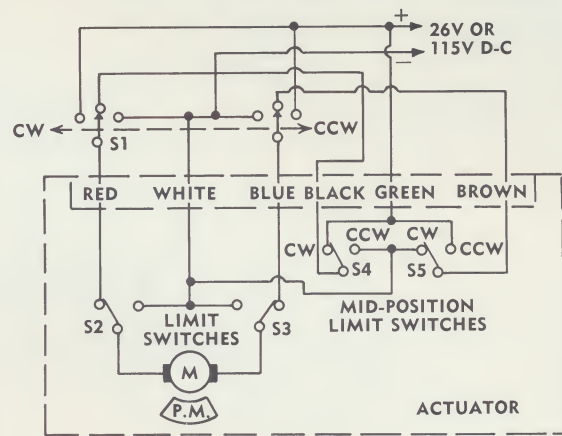
S2 is the CW travel limit switch, included in actuator.

S3 is the CCW travel limit switch, included in actuator.

S4 is an intermediate travel limit switch, included in the actuator. It is wired to halt CW movement when S1 is in the center position.

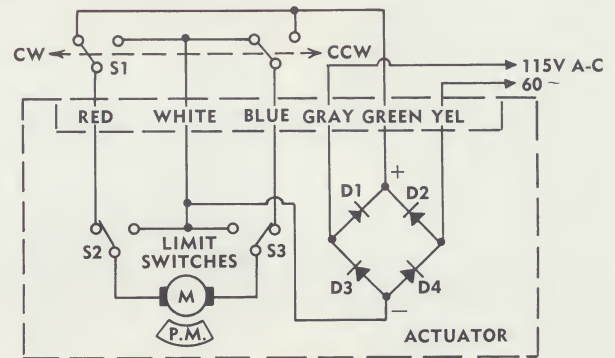
S4 is an intermediate travel limit switch, included in the actuator. It is wired to halt CCW movement when S1 is in the center position.

Dynamic braking is utilized in all three stopping positions.



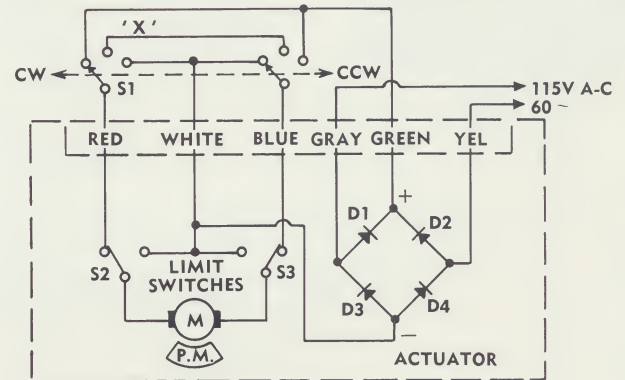
A-C CIRCUIT FOR 2-POSITION ACTUATOR, WITH DPDT MANUAL CONTROL SWITCH

This circuit is essentially that of Diagram #1, with rectifying components included in the actuator. This enables the user to employ standard 115V, 60-cycle a-c power. With this arrangement dynamic braking is provided at both ends of the stroke, and the circuit is suitable only for applications requiring no more than this.



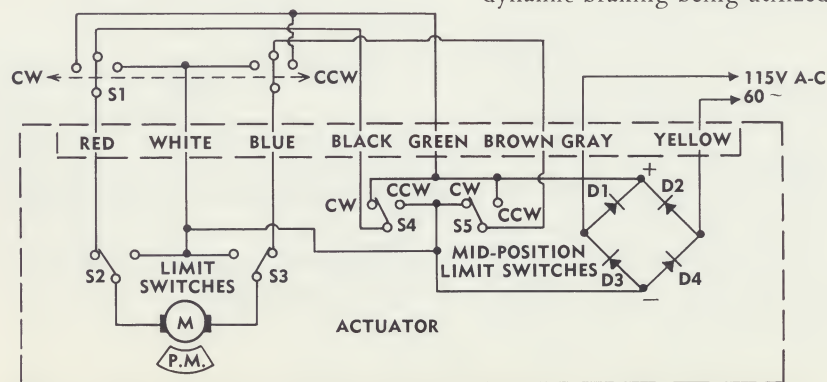
A-C CIRCUIT FOR 2-POSITION ACTUATOR, WITH DP3T MANUAL CONTROL SWITCH GIVING DYNAMIC BRAKING IN MID-STROKE

This circuit is essentially that of Diagram #2, with rectifying components included in the actuator. This enables the user to employ standard 115V, 60-cycle a-c power. Dynamic braking is provided at both ends of the stroke and the circuit is suitable only for applications requiring no more than this.



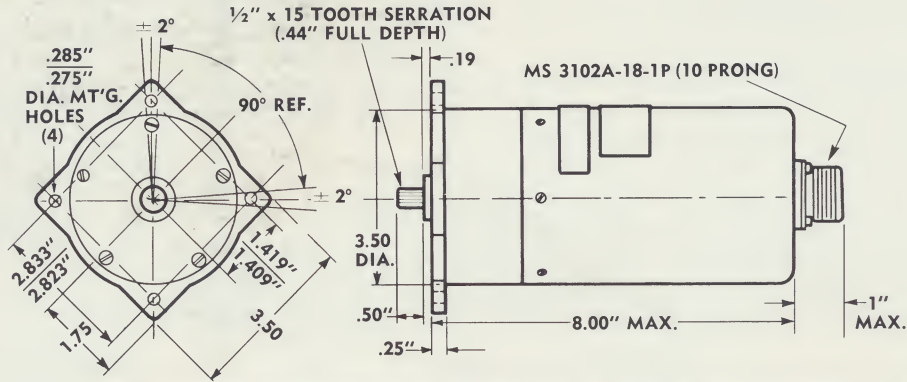
A-C CIRCUIT FOR 3-POSITION ACTUATOR, WITH DP3T MANUAL CONTROL SWITCH GIVING PRESET INTERMEDIATE STOPPING, AND DYNAMIC BRAKING

This circuit is essentially that of Diagram #3, with rectifying components included in the actuator. This enables the user to employ standard 115V, 60-cycle a-c power. Three stopping positions are provided, dynamic braking being utilized in all three.

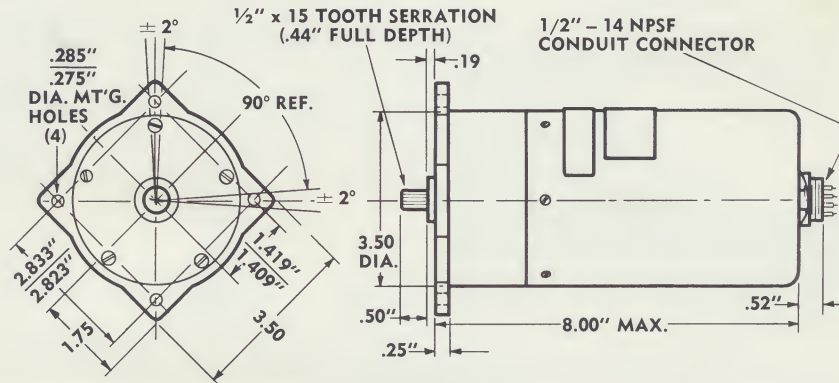


DIMENSIONS

ENCLOSURE #1

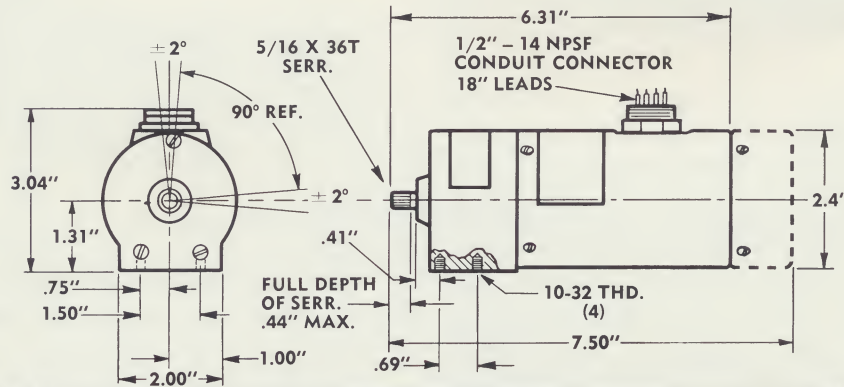


ENCLOSURE #2



ENCLOSURE #3

NOTE . . . The dotted end cap and dimension on this drawing applies to present units. Future redesign will eliminate the end cap.



ENCLOSURE #4

NOTE . . . The dotted end cap and dimension on this drawing applies to present units. Future redesign will eliminate the end cap.

